

REMARKS

The Office Action of September 22, 2006 has been received and its contents carefully considered.

The present Amendment cancels claim 3, and transfers its subject matter to claim 1. It also revises claims 4-6 to depend from claim 1 instead of claim 3. In addition, the present Amendment cancels independent claim 13 and the claims depending from it. As a result, claim 1 is the only independent claim now pending in this application.

The Office Action rejects the claims for obviousness based on US patent 6,968,485 to Van Kirk in view of US patent 9,944,692 to Smith et al (which will hereafter be called simply "Smith" for the sake of convenient discussion). For the reasons discussed below, however, it is respectfully submitted that the invention defined by the current formulation of claim 1 is patentable over these references.

Claim 1 now states (with emphasis added):

1. A method for testing signals of integrated circuits (ICs), comprising the steps of:
 - successively **driving, by a first IC chip, a plurality of test patterns** one at a time;
 - receiving, at a second IC chip, and **latching in the test patterns one by one;**
 - determining, by the second IC chip, whether a currently latched test pattern is correct;
 - if at least an error bit occurs in the currently latched test pattern, the second IC chip indicating that there exists noise interference in a signal trace corresponding to the error bit;
 - repeating the above steps until the first IC chip finishes driving the test patterns; and
 - if the currently latched test pattern is incorrect, the second IC chip adjusting a **reference voltage level** in accordance with the type of the corresponding test pattern to change an **input threshold of the second IC chip.**

The Van Kirk reference discloses an integrated circuit (the first IC in claim 1) and a measurement circuit (the second IC in claim 1). However, Van Kirk's measurement circuit merely measures the difference between the test and reference voltages. Van Kirk fails to disclose driving *a plurality of test patterns* from the integrated circuit to the

measurement circuit, nor does it reveal that the measurement circuit latches the test patterns one by one. Further, Van Kirk fails to teach or suggest adjusting a reference voltage level to change an *input threshold* of the second IC (measurement circuit). The Office Action refers to passages in the reference that relate to ground bounce (column 1, lines 39-40; column 2, line 12-15), hold time problem due to the ground bounce (column 2, lines 55-60), and ground bounce measuring system 300 including chip 310 and oscilloscope 395 (column 3, lines 40-45). It is respectfully submitted, though, that these passages fail to teach or suggest that the second IC chip *adjusts a reference voltage* in accordance with the type of the *test pattern* to change an *input threshold*.

Smith discloses that a receiver determines whether correct data is received from a transmitter for automated calibration. However, Smith fails to teach or suggest adjusting a reference level to change the input threshold of the second IC (the receiver) too. Thus Van Kirk and Smith together fails to suggest that *a second IC chip adjusts a reference voltage level to change an input threshold of the second IC chip if a test pattern is incorrect. Nor do the references suggest adjusting the reference voltage level in accordance with the type of the corresponding test pattern.* It is therefore respectfully submitted that the references would not have provided a motive for an ordinarily skilled person to achieve the invention defined by claim 1.

The remaining claims depend from claim 1 and recite additional limitations that further define the invention, so they are patentable along with claim 1 by virtue of their dependence from claim 1. Nevertheless, several of the dependent claims will be individually addressed below.

With regard to claim 2, the Office Action refers to Van Kirk's ground bounce measuring system 900 (column 11, line 32), and a ground bounce measurement system (column 20, line 50-60). It is respectfully submitted, though, that these passages do not describe or teach test patterns of the ground bounce type, the power bounce type, and the heavy load type.

With regard to claim 4, the Office Action refers to Van Kirk's ground bounce measurement method (Figure 15), a measurement circuit measuring the difference between the reference and test voltages (column 4, line 60), measurement system 900

(column 12, line 36-45; column 13, line 1-20), and a reference voltage in a reference domain and a test voltage in a test domain (column 14, line 63). None of these passages, though, teach or suggest the that the *reference voltage level is decreased to lower the input threshold of the second IC chip* if the corresponding test pattern belongs to the power bounce type.

With regard to claim 5, the Office Action refers to Van Kirk's ground bounce measurement method (Figure 15), a measurement circuit measuring the difference between the reference and test voltages (column 4, line 60), measurement system 900 (column 12, line 36-45; column 13, line 1-20), and a reference voltage in a reference domain and a test voltage in a test domain (column 14, line 63). However, it is respectfully submitted that these passages fail to teach or suggest that the *reference voltage level is increased to raise the input threshold of the second IC chip* if the corresponding test pattern belongs to the ground bounce type.

For the foregoing reasons, it is respectfully submitted that this application is in condition for allowance. Reconsideration of the application is therefore respectfully requested.

Respectfully submitted,



Allen Wood
Registration No. 28,134
RABIN & BERDO, P.C.
Customer number 23995
(202) 326-0222 (telephone)
(202) 408-0924 (facsimile)

AW/ng